REMARKS

Claims 1-5 are pending. Claims 1-5 were rejected under 35 U.S.C. 103(a). Applicant has amended claim 1 to clarify that in the method of the invention, unwashed spent sausage casings comprising nitrate or nitrite are treated with cellulase and a lactic acid producing microorganism at essentially the same time. Support for this amendment can be found throughout the specification. Support for treating sausage casings with cellulase and a lactic acid producing microorganism at essentially the same time is found, for example, at page 9, lines 21-31, and at page 4, line 28-page 5, line 2. Support for unwashed sausage casings can be found, for example, at page 3, lines 2-5, page 4, lines 14-17, and page 9, lines 21-28. Support for casings comprising nitrates or nitrites can be found, for example, at page 4, lines 8-17 and at page 9, lines 27-28. The amendment introduces no new matter, does not require an additional search, and places the claims in better condition for consideration on appeal.

In a telephonic examiner interview held May 28, 2003, Examiner Prats and the undersigned discussed possible claim amendments to place the application in condition for allowance. Applicant thanks the Examiner for the courtesy of his time and for his helpful suggestions.

In view of the amendments above and the arguments below, Applicant requests withdrawal of the rejection and allowance of the claims.

Rejections under 35 U.S.C. 103(a)

In the April 23, 2003 Final Office Action, the Examiner maintained rejections of claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over Lacoste-Bourgeacq *et al.* (U.S. Patent 6,042,853) in view of Etchells *et al.* (U.S. Patent No. 3,410,755) and of claims 1-5 under 35 U.S.C. 103(a) as being unpatentable over Lacoste-Bourgeacq in view of Etchells and further in view of Chahal (U.S. Patent No. 5,047,332), Madamwar *et al.* (J. Ferment. Bioengineer 67:424-426, 1989), and Ono (U.S. Patent No. 5,047,332) for the reasons provided in the January 17, 2003 Office Action and summarized in Applicant's response, mailed February 26, 2003.

Applicant has amended claim 1 to clarify that, in the method of the present invention, unwashed spent sausage casings comprising nitrate or nitrite are treated with cellulase and a lactic acid producing microorganism at essentially the same time.

Applicant discovered that unwashed, spent sausage casings comprising nitrate or nitrite could be treated with cellulase and a lactic acid-producing microorganism at essentially the same time to hydrolyze cellulose and to convert the glucose thus produced to lactic acid. The ability to perform simultaneous saccharification and fermentation on unwashed, spent sausage casings comprising nitrate or nitrite was surprising because nitrates and nitrites are known to inhibit bacterial growth. In fact, as discussed in the specification at page 4, lines 8-17, nitrate and nitrite are used in the sausage making industry to inhibit bacterial growth.

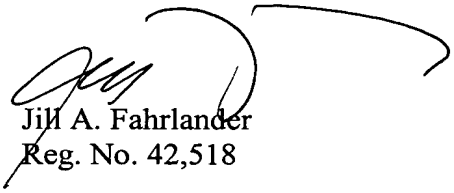
In response to the Examiner's comments regarding the effect of nitrate or nitrite on bacterial growth (p. 8, first full paragraph of the Office Action), Applicant submits that spent sausage casings contain nitrate and/or nitrite. The spent sausage casings used in the Examples of the instant application contained nitrate and nitrite (p. 9, lines 27 and 28). Applicant amended claim 1 to make explicit that spent sausage casings according to the method of the invention comprise nitrate or nitrite.

There has been no suggestion in the art to conduct simultaneous saccharification and fermentation of unwashed, spent sausage casings. In view of the inhibitory effect of nitrates and nitrites on microbes, one skilled in the art would not reasonably expect that simultaneous saccharification and fermentation using lactic acid fermenting bacteria or the *Lactobacillus* species of claim 3, which Etchells describes as being fastidious, would be successful. Applicant has provided an elegant solution to a major economic and environmental problem, specifically, the disposal of spent sausage casings. At the time the application was filed, the annual production of sausage casings in the United States alone exceeded 14 million kilograms dry weight (page 1, lines 20-21). Applicant's invention not only provides a means of disposing of spent sausage casings, but permits conversion of the cellulose to a useful end product.

In light of the foregoing, Applicant respectfully requests withdrawal of the rejection and allowance of the claims.

No fee is believed due in connection with this submission. However, if a fee is owed, please charge such fee to deposit account no. 50-0842.

Respectfully submitted,



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AMENDED CLAIMS SHOWING CHANGES

1. A method of converting cellulose in cellulose sausage casings to lactic acid comprising the step of:

treating unwashed cellulose sausage casings comprising nitrate or nitrite with cellulase and a lactic acid producing microorganism at essentially the same time under suitable conditions and for a period of time sufficient to allow conversion of at least a portion of the cellulose to lactic acid.